Industrial Finishing

Reg. U. S. Pat. Off.

Devoted to Product Finishing in the Factory

Vol. X, No. 2 **DECEMBER, 1933** **$2.00 a Year**

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Letters — from I. F. Readers

The names and addresses of those whose letters and inquiries appear in this department may be had by writing this office, or letters addressed to them in care of this office will be forwarded promptly.—The Editor

Suede Finish

As a regular reader of your journal, I should be exceedingly glad if you could tell me where I could obtain particulars of suede and velure finish. Presumably the finish consists of a coat of varnish of the gold size variety, followed by a spray coat—or coats—of "flock" which are allowed to set, and then wire brushed. I cannot discover a manufacturer of this material in this country, but if you could help me in any way, I should be very glad.—W. B., Surrey, England.

More "Flock Finish"

We were quite interested to read, in your October issue of INDUSTRIAL FINISHING, the article on "Flock Finish" (page 16). You might be interested to know that we have been specializing in this particular kind of work for some time. Most of our efforts, however, have been in coating cloth. Although some of the uses that cotton flock is being put to today are new, the flock itself has been used for years, principally for flock dotting and designing on cloth. In the past few years the rubber companies started using cotton flock in the manufacture of imitation suede.

While all of the above has met with considerable success, we felt that a stapled rayon had far more possibilities than cotton flock. After producing rayon coated cloth as well as rayon designs, we started experimenting over a year ago along the lines described in the article mentioned above. Our method of application, as far as the rayon is concerned, is entirely different from that which you describe. Our present method does not require the use of spray guns, and it does exceptionally good flocking. With our method, however, we do have trouble in getting a good coating on round articles. We have tried one make of spray gun, but the results obtained were unsatisfactory. We would appreciate your advising us, if possible, the name of someone who you consider manufactures a satisfactory gun for this purpose. . . .—T. G. Corp.

Lacquer for Pictures

We have read the inquiry of Swift Picture Frame Co. about a transparent coating for pictures (Nov. issue, No. 1, page 5) and believe we can supply the material they need. It is a low-priced spraying material that they can control the gloss on, and if they will mail us several pictures exactly as they are, ready for the spraying before framing, we will finish and return them for their approval. Varnish is out of question as it takes too long to

WATEROIL STAIN

Additional *Quality* Products:

Lacquer Shading Stains,
Stain Powders,
Wood Fillers
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Finishing Waxes
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THE last word in QUALITY, SPEED and ECONOMY.

A *positive* water stain in a non-grain-raising solvent.

Dries in thirty minutes,—does not bleed.

Fast - to - light *and* NON GRAIN RAISING.

V. J. DOLAN & CO., Inc.

Unquestionable Quality Wood Finishing Supplies

1830-32 N. Laramie Ave. Chicago, Illinois

M&W.Co 1876

METAL PRIMER

Primer is the *Foundation* of the finish. It must be selected for the particular metal on which it is applied.

Are you getting the best possible results with your present primer?

Whether for Chromium, Nickel, Cadmium, Zinc, Aluminum, Brass, Copper or Steel, we shall be glad to recommend the Primer best suited for your needs.

Your inquiry is invited.

MAAS & WALDSTEIN COMPANY

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430 Riverside Ave. Newark, N. J.

Chicago Office & Warehouse
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1416 Enterprise Street

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★ **1.** Superior Galvannealed is a special analysis steel sheet that is soft, ductile and easily formed.

★ **2.** A hot dip, heat treated zinc coating is *bonded* to the base metal rendering it rust-resisting to an unusual degree.

★ **3.** Under the most severe forming operations, the zinc coating will not chip, flake or peel.

★ **4.** Etched or mat-like surface adapted to receive paint, lacquer or enamel finishes.

The Superior Sheet Steel Company
Canton, Ohio
Division of Continental Steel Corporation

Superior Galvannealed
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dry and takes on dust; besides, its greatest objection is that it is oily and spots the paper, as if penetrates below the surface. Our material brings the colors out and dries fast and is low priced. If they will send us some prints, we will spray them and advise what consistency is necessary.—L. Art Studios.

Color Metal Chemically

Please send me a copy of INDUSTRIAL FINISHING for the month of February, as I am interested in the article "Black Finish on Metal Chemically." Also, supply me with any information or book of formulas for the coloring of steel "blue black" with the aid of a chemical bath or other method.—H. B. D., Supt. for Mfr. of Pressed Metal Signs.

Mechanical Striper

In your issue for June, 1933, you carry an ad on page 28 of the Motor Industries Co., showing a mechanical striper for automobile work. We clipped this ad and sent it to our customer in South Africa who had made inquiry about same, but we failed to keep the address of the Motor Industries Co. Would you be kind enough to advise us of this address in order that we may get in touch with them?—D. B. X. Co. (Auto Pt., Varn., Lacq.)

Editor: Yes; La Crosse, Wisc.

Wants Bronze Powders

We would like to have you advise us, the names of manufacturers of bronze powders. If you are able to give us this information, we will appreciate it very much.—A-B Furn. Co., Ltd.

Finish Small Metal Parts

We have an 80-ft. oven in which we do our own baking of enamel work and this is fitted with an automatic dipping arrangement. We can bake up to 400°F. This oven is approximately 3-ft. square and we can handle a tremendous amount of small work at a most economical figure.

It occurred to us that you might have people writing in from time to time wanting to know where they could get volume work on small parts done, and at a reasonable price. If you have any inquiries such as this,

we certainly would appreciate your referring them to us.

Incidentally, in your October issue, we notice somebody writing in for information on enameling snap fasteners, hair pins, etc., and if it is not against your policy, we are wondering if you would care to give us their name so that we could communicate with them and possibly make a satisfactory arrangement to do their work.—G. B. T. Mfg. Co.

Wants Snappier Designs

We have been helped in a number of cases by various articles in your publications. Just now we are particularly interested in developing some new and modern finishes and designs for our 1934 line of calendars.

Could you give us the name of one or more concerns who are specializing in developing new finishes that would be practical, beautiful and appealing? I thought perhaps there might be some expert in this line of business who could give us some information, and if so we will be glad to have you put us in touch with same.—D. E. Co. (Advertising Specialties).

Tumbling Equipment

Please let us have, at your earliest convenience, the name or names of companies manufacturing tumbling equipment.—S. K. A. Co. (Paint & Varnish Makers).

Respirator Wanted

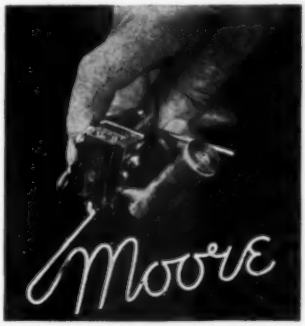
We are interested in getting the source of supply of a good respirator or mask for protection from dust and other matters harmful to the throat and lungs. We would also like the source of air filters, as referred to in a recent issue of your magazine. We should greatly appreciate it if you would supply us with the addresses of these concerns, so that we can get the necessary information. —G. V. F. & S. Mfg. Co. (Toys, Specialties.)

Silk Screen Paint

We are manufacturers of window and counter display signs through the silk screen process on cardboard, metal, glass, wood, and fabric.

One of our very good customers has requested that we process on a

(Continued on page 98)



FOUNTAIN STRIPERS
A SUCCESS

"We made great strides in improving quality and appearance after using your equipment on enamel products," writes a typical user.

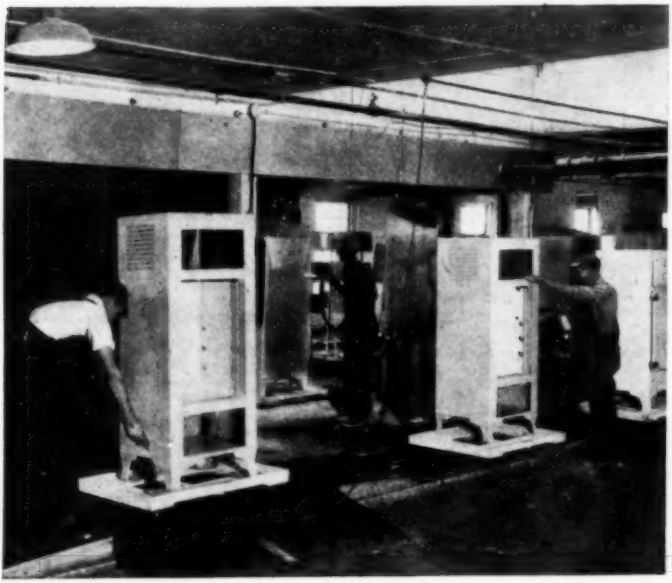
Finishing shops of all kinds make similar reports. Some talk of money saved, some about tripled production per man, some about cleaner lines, some about simplicity in design and operation.

Indestructible and fool-proof, a Moore Fountain Striper handles any material, makes 300 to 1500 feet of line on one filling. Made in several sizes. May be used on wood, metal and glass. Make a start toward saving money — write for complete information and names of enthusiastic users.

DISTRIBUTORS

We are increasing our factory capacity and distributor organization. Inquiries are invited from distributors specializing in specific trades.

THE GENERAL INDUSTRIES CO.
Moore Fountain Striper Division
1 TAYLOR AVE. • ELYRIA, OHIO



Products that grow on Acquaintance

It's no trick to make a product sparkle in a store window, but to build one that looks youthful after months of hard service is a real achievement. When your product retains its good looks, it sells itself to the consumer with ever increasing force.

DeVilbiss Spray-Finishing Equipment produces finishes that will stand hard knocks without showing it. The new Type MB Gun with Feather-Touch Control is a revelation to all who have used it. Its better atomization at lower pressure means higher quality finishes. Its marvelous balance and scientific design insure faster, easier operation. DeVilbiss engineers are continually improving DeVilbiss Equipment. That's why it produces finishes that remain untarnished in the days to come. Phone your representative or write us direct.

Try the new DeVilbiss Pro-Tek on your hands. Paint, lacquer, enamel and similar stubborn materials will wash off under running water. Send for free sample of DeVilbiss Pro-Tek.

DeVilbiss

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Direct sales and service representatives available everywhere

A $165,000 Finishing Fire

by C. Dan Youngs

IN OAKLAND, CALIFORNIA, a plant was busily engaged in the manufacture of 1934 State license plates. Months had gone by in the work, and thousands and thousands of finished plates were stored awaiting delivery time. Thousands more were in process of manufacture and since time was growing shorter with but a month ahead for delivery time, additional workmen were employed. Practically every known safeguard against fire was given attention. Extinguishers, pails, sand boxes—all were available. They were prepared to meet every possible contingency in case of fire.

Yet in the middle of November this plant burned to the ground with a lose of nearly $165,000!

Each and every plant doing finishing will be interested in the cause of this fire for many, if not all of them, have this same fire hazard, totally overlooked.

A workman was wheeling a barrel of enamel on a truck to the finishers. As he was passing a baking oven with opened doors, a hoop came off the barrel at the bottom, permitting the contents to cascade across the floor. In spite of frenzied efforts to mop it up with burlap rags and to pour sand on it, it reached the fire and in a moment the room was ablaze.

Whether or not there will be any compensatory action against the finish manufacturer for defective cooperage, is a matter for the Courts and the Insurance companies to determine, but in any case, damages received will not compensate in full for the loss in time, equipment and buildings. Nor will it compensate for the delay the State will have to undergo because of delay in furnishing new license plates.

"There is always some unforeseen, unconsidered fire hazard existent in each and every finishing room — in your finishing room. It is these things, which are overlooked as holding no possible fire danger, which may be the ones to cause the loss of the entire plant, or at least cause serious damage with resultant loss in employment."

★ ★ ★ ★ ★

It's All Clear Afterward

Two things might have been done to avoid this disaster. The enamels could have been furnished in iron drums, and the factory route to the finishers could have been a safe distance from those opened ovens. Yet who would remotely believe that a hoop might give way just at that crucial moment? And in how many other plants does this same unconsidered fire hazard (or others) exist?

To obviate a recurrence of this type of accident it might be well for each finishing foreman to carefully analyse his own fire hazards, and for each finish manufacturer to carefully check over his cooperage. The foreman should arrange his routes for transporting finishes so

that they are kept away as far as possible from baking ovens or other hazards. If this is not practical, it should be seen to that the oven doors are tightly closed while finishing materials are being transported in their vicinity.

Despite common beliefs, finishing materials are rarely if ever explosive, yet of necessity they are highly inflammable. Hence it logically follows that they should be kept away from open flames.

Hazards in Reopened Plants

With winter at hand and the upturn in business conditions developing favorably, factories which have either been shut down entirely or operated with skeleton crews will need to give the matter of fire prevention considerable attention.

It is possible that in times of rush production and good profits some plants have been able to successfully gamble against this hazard, yet now when every dollar taken in means so much more to the management, any gamble that takes the form of risking fire damage to a plant is not only dangerous but is absurd!

Keep Up Your Insurance

Obviously the carrying of sufficient fire insurance is imperative, yet this in itself is not sufficient. Even though it may be hard to dig up premiums, any reduction in the amount of fire insurance carried is poor economy, for it may result in losses which will put the plant completely out of business. And although fire insurance may take care of the most of the physical damage, there is no type of insurance available which will recompense a plant for loss of time and production while rebuilding after a disastrous fire.

Investigate All Fire Hazards

Now is the time to take a careful inventory of all fire hazards and the condition of all equipment meant for fire fighting or fire prevention. Anticipate the worst and effectively guard against it. No matter how much investment is made in fire fighting equipment, if it is not in condition or not available when needed, it is no better than having none whatever.

Since at times it is difficult to see clearly those things which are closest at hand, it may be wise to invite an insurance inspector to make a tour of the plant, pointing out possible fire hazards and suggesting efficient ways of overcoming them. If this be done with an open mind, great good will come of it, since it is distinctly to the advantage of the insurance company to minimize any existing fire risks.

As was the case in the Oakland fire, it is often the unforeseen unconsidered hazard which does the most damage. Any diminution of such hazards is not only good business—in many cases it means absolute self-preservation!

Picture Finishing

by C. R. Bragdon
Secy. Ault & Wiborg Corp.

What materials and methods to use in applying transparent preservative coatings to photographs, paintings, color prints, maps, blue prints, sketches and drawings on paper or canvas.

FREQUENTLY it is necessary to apply a protective coating for preserving or adding to the luster of paintings, engravings, photographs, sketches, blue prints, maps, etc. A wide selection of varnishes and lacquers are available for this purpose. . . .

Picture (Dammar) Varnish

The introduction of dammar gum, soluble in the cold in turpentine and similar solvents, made it possible to produce a varnish of almost water-white color, which custom gradually established as the typical "Picture Varnish." Besides being pale, lustrous, and quick drying, it has an extremely slow rate of yellowing with age. Also it has a somewhat better degree of flexibility than most of the straight resin varnishes, but it becomes brittle in time. The fine, hair-line cracks on many old paintings are attributed to the shrinkage of the picture varnish, while the film of oil color beneath still retains flexibility. If a very thin film is applied, this cracking is not so apt to take place, and this type of varnish is still much used for picture finishing. It is usually brushed on, but it can be sprayed.

Shellac; Spirit Varnish

The most widely used modern type of varnish for protecting printed and lithographed pictures on paper is spirit varnish, consisting of a solution of shellac or other spirit-soluble resin in alcohol, occasionally modified by the addition of various softening agents to make the varnish more flexible.

Applied by Rollers

In mass production plants this varnish is usually applied by a coating machine in which the sheets are passed between two rollers, one of steel and one of a glue or rubber composition; the sheets are faced to the latter, upon which is distributed, by a suitable arrangement of fountain and rollers, a uniform film of the varnish. From this machine the sheets usually pass on conveyor belts through a heated drying chamber. In the few minutes that it takes to pass from one end of the chamber to the other, the fumes of solvent are evaporated and the sheets come out at the other end dry and ready to stack.

Applied by Spraying

Spraying is also occasionally used as a means of applying spirit

varnish, particularly of the kind known to artists as "Fixatif," but the drying is so rapid that brushing cannot easily be done. Spirit varnish is comparatively inexpensive both in material and application costs, and it serves well for labels, post-cards, magazine covers; charcoal, pastel and pencil drawings; and a wide variety of similar work.

Bleeding Spirit Varnishes

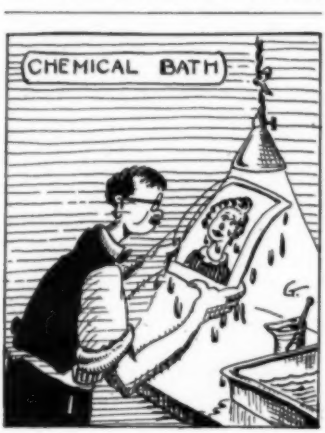
One characteristic of spirit varnishes that has to be allowed for in varnishing colored prints or lithographs is their tendency to cause bleeding of some of the printing inks made with lake colors. This results from the solubility of the lake in alcohol, such that the film of varnish becomes tinged with color, particularly around the margin of the inked lines or spaces, giving a blurred effect. The best remedy is to see that the inks used are non-bleeding under spirit varnish.

Lacquers, Synthetic Resin Varnishes

Where the quality of the protective film, rather than low cost, becomes the chief requirement of a picture coating, a lacquer or a synthetic resin varnish is recommended. Nitro-cellulose base lacquers of two or three types are available; they do not, as a rule, give quite as good luster as the above described products, but they are much tougher and more flexible; they will stand washing and are as pale or paler than most picture varnishes. They are even more prone to a bleeding tendency than spirit varnishes, so that care must be used in the choice of colors over which they are to be applied. They may also, when applied over oil paintings, have a tendency to "lift" or shrivel the paint film, which would, in most cases, ruin it. A lacquer must therefore be chosen that is specially designed for the work to be done.

Excellent results have been obtained in the use of lacquer, either of the spraying or coating type, on photographs and prints. Spraying is recommended; brushing is difficult.

For a still higher degree of durability than lacquer, varnishes of the new synthetic resin type have been developed and they give excellent protection provided the picture is on a durable base or background; of course, it would be practically impossible to impart any great degree of permanence to a flimsy boxboard stock.



By Rolling, Spraying or Brushing

Such varnishes can be furnished in the coating, spraying or brushing quality. They have less tendency to cause bleeding or lifting than lacquers and, while they are slower in drying than any of the other types of material above mentioned, they dry tack-free in a few hours or can be force-dried

PURE SHELLAC

is the best sealer

especially if it is

Du-Pros Shellac

PURE SHELLAC is the standard of comparison for all other first coaters. Through many years of use, finishers are familiar with its quick drying, fine sanding, transparency, unexcelled sealing, extra good build, and trouble-free application.

At today's low price, pure shellac is the most economical first coater and sealer, wherever appearance and wearing qualities are a consideration.

But unless you use the purest shellac you cannot be sure of best results. Get the highest grade of strictly pure shellac by buying Du-Pros. This is the brand name of the double processed, strictly pure shellac made by

JAMES B. DAY & CO.

CHICAGO

Du-Pros Strictly Pure Shellac, Lacquer, Stain, Enamel, Etc.

in a half hour or less at moderately elevated temperatures. They retain flexibility for almost indefinite periods, and are only slightly less water-white in color than lacquers. They were developed particularly for sign finishing, and in exacting tests for that purpose, they have come through exposure tests of several months in the destructive Florida sun with negligible deterioration of luster or soundness of the film. They are washable and have good resistance to alkalis and other chemicals with which they may occasionally have to come in contact.

Use a Thin Film

No matter what type of coating is chosen, it is good practice in practically all kinds of work, to use the material at a thin to medium consistency and to apply a film that is only heavy enough to give uniform coverage and luster and assure the full measure of protection of which it is capable.

To Prevent Red Bleeding Through Over Coats

IN LOOKING over INDUSTRIAL FINISHING, I see where some one is having trouble with red bleeding through the other paint. The safest thing I have ever tried is: Give your job a coat of silver aluminum paint. Then put your other color on and I think you will find this to be satisfactory.—I. C. FEYE, Painter.

Removable Drum Heads

AT TIMES, I have noticed in INDUSTRIAL FINISHING, references to different types of steel drums, and it is indeed interesting to note the progress that has been made in this direction. However, one drum has come to my attention which is different than anything I have seen described here. It is a special type of drum with a removable cover that is simply locked by a single motion of a lever, the lever being an integral part of a locking-ring. A composition gasket is so arranged that the drum is sealed against the escape of air, gas or liquids when the lever is locked, and slots are provided for applying a seal to guard against tampering in transit.—J. E. H.

Paint and Plastic Products

Paints and varnishes, damp-proofing products, caulking, pointing and glazing compounds, roofing and flooring treatments and numerous related specialties are indexed and described in a new 180-page loose-leaf catalog published by The Tremco Mfg. Co., 393 E. 131st. St., Cleveland, Ohio. Tremco also distributes a 4-page news sheet once a month.

West Coast Lacquer Concern

Pacific Laboratories, Inc., of Park Rose Station, Portland, Ore., through James L. Parsons, president, announces the addition of a full line of shelf goods and contracting painter's supplies to their industrial lacquer business.

The firm, which commenced operations early in July of this year, has made marked progress. It has expanded until it is now producing and selling over two carloads of lacquers weekly.

With proposed additions, 2000 gallons of industrial lacquers and associated commodities will be produced daily. A concrete structure costing $15,000 will be built for manufacturing and warehousing needs.

The company is headed by James L. Parsons, who has been a well known figure in the Pacific Northwest paint trade for several years, and G. Harry Miller, who has been connected with the development of lacquers for over 25 years. Mr. Parsons is president and sales manager of the company, and Mr. Miller, technical director and plant manager.

Byrd's Antarctic Expedition Radio Transmitters finished with S-W KEM and OPEX

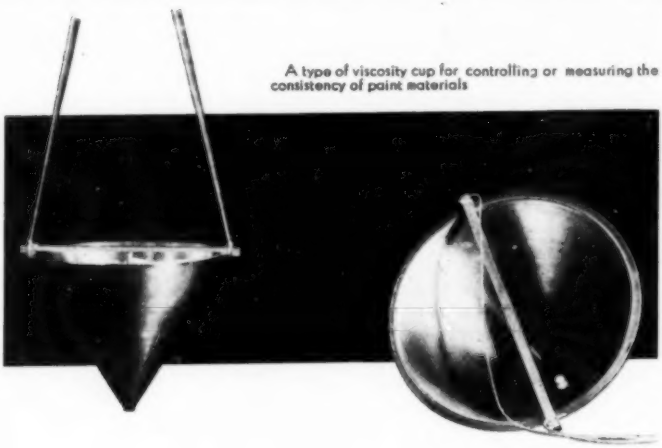
These transmitters, manufactured by the Collins Radio Company, are by far the most elaborate radio transmitting equipment ever carried by a polar expedition. They are finished with Sherwin-Williams Kem Baking Enamels and Opex Lacquers. Only finishes capable of withstanding extreme temperature variations could be used to protect these delicate and important instruments upon which so much depends. Here again is the highest form of endorsement for the dependable quality of S-W Kem and Opex materials.

Acme Photo

• • •

The complete story of Sherwin-Williams Kem and Opex finishes is one that every manufacturer should have. Details will be supplied without cost or obligation. Write The Sherwin-Williams Company, Dept. 617, Cleveland, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES



A type of viscosity cup for controlling or measuring the consistency of paint materials

Painting Metal Products

(Part II — Preparation and Application of Finishing Materials)

by L. E. Frost

Material and Process Engineering,
Westinghouse Electric and Mfg. Co.

KEEP THE PAINT stored in a room kept at 60°F. or higher. Cold materials will be high in viscosity and require too much thinner to reduce to a working viscosity. Adding thinner to cold material may cause separation of the resin and pigment. When necessary to store in a cold place, or when paint is received in cold weather, bring it into a warm room a sufficient time before using.

Materials not in use must be kept in containers as nearly full and as air-tight as possible, or protected with a cover resting directly on the material in the can. This prevents thickening of the material caused by oxidation of the oils and evaporation of the thinner.

Stir Pigmented Paints

Thorough stirring of the paint both before and after thinning is essential for good results. The pigments are heavier than the liquids and have a tendency to settle. All pigment that has settled on the bottom of the container must be loosened up and thoroughly mixed with the liquid. Use a broad, flat, clean paddle and stir with a rotary lifting motion to lift the heavy portion to the

Our Fires Must Be Spectacular - - - - - and Lasting!

IN BRIEF, we were asked to submit a color material which could be used to depict scenes on glass . . . give a smooth, translucent effect . . . and stand up when exposed to all conditions of weather. The call came from the manufacturer of a patented device for simulating various types of action — fire, rain, sleet, steam, etc. — on outdoor advertising boards.

That we succeeded in furnishing the *right* material for this purpose is evident from a letter we have received from the manufacturer saying: "We are now using Egyptian Lacquer exclusively!"

NRA MEMBER U.S. WE DO OUR PART

Your product may not be as spectacular as these animated display boards. But you are interested in knowing whether we can furnish a material better qualified to give *your* product the "finishing touch."

The chances are you will find Egyptian service unusually valuable. You are invited to inquire about it.

EGYPTIAN · LACQUER

THE EGYPTIAN LACQUER MFG. CO. • 90 WEST STREET, NEW YORK

Kindly mention INDUSTRIAL FINISHING when writing advertisers

top. Pigmented materials will not stay mixed indefinitely and should be stirred from time to time when in use.

Incomplete stirring will result in the following:

1) The material will be thin on top and thick on the bottom of the container.

2) The finish will be too glossy or too flat, and will be off color.

3) The thick material on the bottom will produce a chalky film which is not durable, and which does not adhere to the surface.

4) The thin material at the top will have poor hiding or covering power, and will contain an excess of oil and resin which may be the cause of "lifting" when the dried film is coated with lacquer.

Clear varnishes and lacquers contain no pigment and need no mixing or stirring before drawing from the original container.

Strain Paints if Necessary

Paints containing specks, dirt, and paint skins may be cleaned by straining. This may be done through a wire screen (approximately 50 mesh) or through a double thickness of cheesecloth. It should not be necessary to strain new paint, but skins may form soon after the container is opened. Straining may be done more quickly after thinning than before.

Thinning for Consistency

Paints must be thinned with the proper thinner to a consistency suited to the method of application. Use no more thinning than is required to obtain a satisfactory working consistency. Too much thinning will cause coatings which are too thin. It is important that the painter understands the relation that exists between the spreading capacity of a paint and the thickness of film, and the importance of the latter. It is sometimes stressed as a great virtue that a certain paint has especially great spreading power.

It is well to remember that there are but 231-cu. in. in a gallon. When a gallon is spread over 500-sq. ft. the thickness of the wet film will average 0.0032-in. If the paint contains volatile solvents the dry coat will be less than this. Spreading a gallon over twice this area will reduce the thickness of coat by 50%.

In many cases there is almost a direct relation between the thickness of coat and the durability of the coating. Obviously it would be a mistake to overemphasize the importance of large spreading capacity for such applications. The aim should be to apply as much paint as possible, consistent with freedom from improper drying and overlaps.

Measuring Consistency

Control of the amount of thinning may be accomplished in a number of ways. Using measured proportions of unthinned material and of thinner is one way. The use of a viscosity cup is another way. (See illustration at beginning of Part II, of this article.) Specific gravity control may also be used, providing the density of the thinner is sufficiently under that of the unthinned material, so that adding thinner will produce a measurable change in specific gravity.

Spraying the Finishing Material

Faulty application is another of the causes of paint defects. A paint film that is porous has little value as a protective coating. When spraying, apply uniform

coats which are continuous and which have a glossy wet appearance. Spray the material wet enough to flow out smoothly. Move the spray gun with a steady motion at such a speed as will produce a wet glossy film of uniform thickness. Each stroke of the gun should overlap the previous stroke about ⅓ the width of the spray, to produce a uniformly covered surface.

A film which has a dry, dusty appearance is porous and will not protect the work. Such a film is caused by holding the spray gun too far away from the work or at too small an angle, or by not having enough thinner in the material. Best results are usually obtained with the nozzle of the gun 6 to 10-in. from the work and with the gun held so that the material strikes the work at an angle of 60° to 90°. Use the lowest air pressure that will produce smooth films. Generally, this atomizing pressure will be between 30 and 40-lbs. per square inch on suction cup spray guns, and 40 to 80-lbs. on pressure tank systems.

Spray Pressure

For pressure tank systems, use the lowest air pressure in the tank that will give a slow flow of paint from the spray gun when the atomizing pressure is turned off. This varies from 5-lbs. for varnishes and lightweight paints to 12-lbs. for heavy paints. When too much pressure is applied to the liquid, more paint is delivered to the nozzle than can be properly atomized. Increasing the pressure in the tank requires an increase in the atomizing pressure to prevent runs and sags and to produce a smooth uniform paint film.

Favorable Conditions

Proper ventilation, uniform temperatures, well kept equipment, and good light are all essential to obtaining good results. Paint dries slowly in cold damp locations. Light is important and should be strong but free from glare. Strong air currents blowing over the freshly painted surfaces are to be avoided. All air lines to spray equipment should be equipped with oil and water separators. These should be maintained in good condition by frequent draining or cleaning.

Using Lacquers

Lacquers are more susceptible to bad painting conditions and improper cleaning than any other type of material. The surface to be lacquered must be as nearly chemically clean as possible and then lacquered at once. The stain deposited on smooth metal parts by touching with the hands may be sufficient to prevent good adhesion and cause the film to peel off when dry. When trouble with peeling is experienced, the parts should be washed with clean lacquer thinner and wiped dry with clean cloths.

Lacquer Troubles

Blushing or whitening of the lacquer film is caused by moisture condensing on the surface of the film while it is drying (due to the chilling caused by evaporatng solvents) which causes the solids of the lacquer to throw out of solution. The addition of about 10% of a less volatile solvent such as butyl-acetate to the lacquer thinner will usually prevent blushing on wet days.

Pitting and blistering of the finish is usually caused by the

lacquer drying too fast, thereby trapping air bubbles in the film. It can usually be overcome by using retarder, like butyl-acetate, and by eliminating drafts over the work.

Vitreous Enameled Parts

IT IS generally admitted that this is the day and the age of the specialist. Specialization is invading many fields and it is finding its way into ours. Take, for instance, the manufacture of a product embodying one or two small parts which would be much the better if vitreous enameled; the parts are so small the firm does not feel justified in installing the necessary vitreous enameling equipment. What is to be done? If the management is wise, the company will do what quite a few others are doing; it will get in touch with a firm which specializes in supplying vitreous enameled parts, all ready for application to the product.—S. J. K.

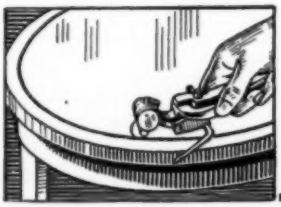
Vibrator Removes Finish

YOU have taken off old finishes with commercial varnish and paint removers; you have possibly used a scraper and a blow torch for taking off old paint; possibly you have even resorted to the use of a flour paste and lye mixture for taking off a lot of badly alligatored paint, where it didn't make so much difference in what condition the surface was left. But did you ever take off paint with an air hammer? No joke, the thing is actually being done. On outside structures, oil paint is removed by a vibrating, pneumatic, hammer type of portable tool. The blows are short but they are very fast, and the tool is well suited to the work.—Contractor.

Powder Puff Finish

EVER TRY THIS? Flow on a heavy coat of any slow-drying lacquer enamel or synthetic enamel. Before it is dry sift on white wood sawdust with a flour sifter. The result will be a new, economical, and unusual finish. Variations can be obtained by using hardwood sawdust, crushed mica, or any powder which may suggest itself. The finish has great possibilities in color, texture and design. I have seen this used to a limited extent and I believe it's worth developing further.—E. M. Stephenson—(Finish Mfr's. Representative).

Ideal for striping and decorating furniture, toys, metal products, auto bodies, etc.



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What's New « «

Fluid Cut-Off Valve

A NEW, patented fluid cut-off valve, for use with DeVilbiss spray guns, has been developed by The DeVilbiss Co., Toledo, Ohio, manufacturers of spray-painting equipment. This improvement permits the operator to drain the gun of fluid, or to blow out any obstruction in the fluid tip, without disconnecting the gun from the hose. Hence, it increases production speed.

The Type H-5135 valve is in reality a three-way cut-off. It is so constructed that, when the lever is turned horizontally to the rear, a port in the side of the valve is opened as the fluid passage is closed. This results in a free air passage through the valve into the fluid inlet of the gun. When the trigger is pulled, air force and suction drain the fluid from the fluid passage. By covering the nozzle of the gun, any obstruction in the fluid tip may be blown back, and out of the vent hole. The valve is so designed that, regardless of the position of the lever, the fluid hose can not drain through the side part.

Airplane Finishes

CAM Lacquer Co., 318 S. Date, Alhambra, Cal., has recently formulated a new line of airplane finishes that are primarily designed for metal planes, and are very resistant to the action of fog, sleet and hail. Also, a "lifting thinner" for cleaning and removing old paint and lacquer from airplanes with considerable saving of time and no injury to either metal or wood. These new products are receiving considerable attention from a number of western airports.

Barrel Painting Machine

A BARREL painting mechanism for the rapid spray painting of kegs, drums, barrels and similar wood and metal cylindrical containers, is announced by Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill. The barrel-revolving machine fits into a special spray booth equipped with an oil-and-water extractor with two regulators and three gauges for removing all dirt and moisture from the air line. The barrel to be sprayed is rolled onto the revolving mechanism by gravity through an adjustable opening in the rear of the spray booth. It rests on revolving sheeves which are adjustable for all standard sizes of barrels. A totally-inclosed motor, connected by V-Belt to a reduction gear, revolves the sheeves; speeds are adjustable for various barrel diameters.

An operator sprays the finishing material on the barrel as it revolves. Immediately upon finishing a barrel he pulls the lever on the mechanism which rolls the barrel onto a conveyor and the next barrel in line takes its place on the revolving mechanism. Upwards of 200 barrels per hour are painted in this way.

Wood Grained Paper

Editor's Note: Samples of some very attractive paper finished glossy and flat in colors and figures to closely resemble the natural grain and color of fine hardwoods have been sent to this office by the Fancy Paper Dept. of the Hampden Glazed Paper and Card Co., Holyoke, Mass., in answer to inquiries about these products.

In a letter accompanying the samples, the company says: "We have several wood grain patterns and one in particular, illustrated by the sample of light brown high finished stock, is very popular at the present time. This is an imitation of the Japanese wood veneer. Naturally, the color can be changed to any color scheme wanted, and we are in a position to quote on various weights of stock, depending on the quantity.

"In addition to this we, also, have a mahogany pattern as illustrated by the rather poorly printed sample of tan also enclosed."

Finishing Wood Turnings

by R. J. Fairburn
Zapon-Brevolite Lacquer Co.

Frequent inquiries regarding the most efficient and economical method of finishing wood turnings lead us to believe that a description of the methods, now being successfully used, is in order. These methods vary with the volume of work being done, the finishing cost permitted, and the size and shape of the pieces. This description deals with plain finishes—does not include striping, multicolored work nor baked finishes.

THE so-called "Gasket Dip" method is particularly well adapted for finishing broom and mop handles and similar long, round, straight pieces. It gives a smoother finish than other dip operations, and drips and sags are eliminated. Of course, it involves an individual handling of each piece and so is not economical for very small work.

In operation, the handle or plain turning is dipped into the finishing material and then drawn through a rubber gasket or squeegee. By drawing the work through quite rapidly, a heavier coating is produced. More finishing material is scraped off when the work is drawn through slowly.

Due to qualities of viscosity, a well-made, gasket-dip lacquer works better with this method than other finishing materials. Shellac, varnish and oil paints are sometimes used, however. As many coats may be applied as are desired, although one coat of a properly made lacquer produces a hard, tough, high-gloss finish. It is available in both clear and colors.

On fuzzy wood, an extra coat of lacquer or sealer may be necessary. If the wood is very rough, this first coat may be smoothed with steel wool. Where a very high gloss or an added depth is wanted, a coat of high gloss, clear lacquer or varnish may be gasket-dipped over the color coat.

Gasket and Dip Tank

The gasket should be made of very soft rubber ⅛ to ⅜-in. thick. The hole, through which the turning is drawn, should be about half the diameter of the piece to be finished. It should be perfectly round, with no rough edges. Because of this, it is usually preferable to purchase factory-made gaskets.

An economical and satisfactory dip tank may be made of a section of ordinary pipe. For broom handles, a 2-in. pipe is satisfactory. It should be somewhat longer than the handles to be dipped. A threaded cap at the bottom end will complete the tank. For speedy production, the gasket should be secured at the top end.

The work may be further facilitated by connecting a 1-gallon or 5-gallon container to the tank in such manner that the paint level will be kept constant. This reser-

voir will require filling less often and may be filled without removing the gasket.

As a rule broom handles are not finished at the broom end. This offers a means of holding the handles while they are being dipped and racked for drying. Handles that must be coated full length, may have a nail or hook of some sort driven lightly into one end.

Very little solvent evaporates from a tank of this type. If production is rapid the liquid in the tank will work down so that thinning solvent need be added only in the morning—and then only after making sure that it is needed.

Rapid Dipping

Any piece that will drain properly may be dipped. That is, any piece so shaped that the excess lacquer or paint will drain off without leaving objectionable sags or drips—sometimes called tear drops.

Better results are obtained if a lacquer or paint is used that has been especially formulated for dip application. A finishing material made for brushing or spraying may not be efficient for dipping. Viscosity flow, drying time and drip time must be considered when formulating the material.

A nail may be driven lightly into the end of each turning, or some other means may be used to suspend each turning while it is being dipped and dried. Sometimes very small articles are placed in a wire mesh basket and the entire basket dipped. The work should then be suspended over the tank or a drain board so that the excess lacquer or paint will flow back into the dip tank.

Tear drops can be removed by brushing them off just as the work is about through dripping and before is has set too hard. An ordinary paint brush is the best tool for this purpose.

Tank Cover; Evaporation

Any dip tank should have a cover, as nearly air tight as possible, to be used during the night or whenever the tank is not in service. Most finishing materials, applied by dipping, dry through evaporation of their solvent. In the case of lacquer and shellac, this evaporation is quite rapid. Unless the tank is properly covered, enough solvent may escape to materially increase the cost of finishing.

A certain amount of evaporation is going on while the tank is in use. With this in mind, the tank should be deep and narrow rather than wide and shallow. Thus a smaller area will be exposed for evapora-

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tion. Solvent must be added as often as is necessary to maintain proper viscosity. For wood turnings it is not as necessary to maintain as accurate viscosity as for certain types of metal finishing. This usually obviates the need of instruments for testing the viscosity as most finishers, with a little practice, can closely estimate the proper consistency. Viscosimeters, Ford cups and other apparatus are available when needed.

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Dipping is one of the cheapest methods of finishing. Unless proper care is used the finish may look cheap. With a little care, finishes produced by this method compare favorably with those put on by spraying or other methods of application.

Slow Dipping

Some work may be slow dipped —work that otherwise could not be finished by the dip method. In this case the work is immersed in the finishing material and then withdrawn slowly enough to insure a proper coating and at the same time permit the excess finishing material to drain off properly. In some cases this procedure is reversed; the work being immersed slowly and then withdrawn quickly. This method has the merit of getting the work into the tank without imprisoning air bubbles that might leave pock marks on the finished surfaces. It can not be used in all cases, however, as some work must be withdrawn slowly to insure proper draining.

A specially made machine is generally used for slow dipping. It is so made that it withdraws the work at just the proper speed. Such apparatus is mechanically

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t . . has many qualities not found in any other flat varnish. For example, G Flat's Sheen remains absolutely uniform under any temperature. Those of you using flat varnishes right now know that if the temperature changes, it changes the sheen of the varnish you are using. The Sheen of G Flat does not change with the temperature, but remains absolutely uniform all the time. *G Flat is the nearest to a perfect flat varnish that has ever been developed and yet it costs no more than ordinary flat varnishes.* Write today for sample and prices.

Indianapolis Varnish & Paint Co., Inc.
Indianapolis Indiana

driven and quite simple in design. All that is required is a dip tank and a proper means of holding and dipping the work at the right speed. A most important factor is that withdrawal must be steady and uniform. Otherwise the work will come out with rings or marks on the dipped surface, showing where withdrawal was uneven.

(To be continued next month)

Cook Finish Described

The Cook Paint & Varnish Co., Kansas City, Mo., has recently published a comprehensive booklet (16 pages 6x9) describing their "Coroc 801" line of industrial finishes, with general directions on how to apply them on various surfaces.

"Coroc 801" is a highly durable synthetic enamel, recommended for gasoline tank trucks, filling station buildings and pumps, automobiles and trucks, store fronts, buses and street cars, railway coaches, machinery, furniture and floors. Being unharmed by gasoline attack, it is widely used by oil producers and refiners in finishing trucks, equipment, etc.

A complete color range is offered in the "Coroc 801" line. It can be applied over any previous finish, on wood or metal, and dries overnight to a high gloss.

Copies of the "Coroc 801" booklet may be obtained by writing the Industrial Sales Division of the Cook Paint & Varnish Co., Kansas City, Mo.

Book of Latest Formulas

A new and valuable book containing correct formulas for making thousands of products in all fields of industry has just been published and is now ready for distribution by The Chemical Formulary Co., Thirty-five 35th St., Brooklyn, N. Y. It contains more than 550 pages, size 5½x8½-in. and is priced at $6.00—but well worth many times that amount by men who have use for only a few formulas.

To obtain these formulas the editor of this interesting project has succeeded in obtaining the coöperation of a long list of experts in the various fields covered. A perusal of the book indicates that the formulas submitted are not ancient recipes but are the latest developments used in their daily work. This book will be of inestimable value when a new problem arises, by enabling one to obtain information quickly.

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Practical Publications, Inc.

802 Wulsin Bldg. Indianapolis, Ind.

Letters from I. F. Readers

(Continued from page 7)

vitreous surface in colors, such as, red, blue, green and also black. The detail would be fine lines. It is very important that these lines be sharp and distinct, and that they do not become feathery or run so as not to be exact. After application on the vitreous surface, the pieces which we have processed must be placed in a baking oven and submitted to a temperature of 1500°F., which temperature is necessary to properly fix the vitreous material.

This work must necessarily be done with a flexible screen in a concave surface, and this we are in an excellent position to accomplish. However, we are at a loss for a source of supply for color that can be screened through a No. 18 screen, and which will withstand baking at 1500°F.

As a constant reader of INDUSTRIAL FINISHING, we are soliciting your assistance by way of recommendation of one or more business suppliers. If a suitable source is found, you will not only be helping us, but our good customer who has a large volume of this work to turn out. Therefore, numerous people will profit from the efforts put forth.—E. Corp. (Mfrs. of Creative Adv. Displays.)

Graining Rubber

The proper kind of soft rubber roll for applying graining on sheet steel seems almost impossible to obtain.

In the past we have purchased rolls from the —— Co., who makes printers' rolls. These are satisfactory, but they will furnish no roll more than 8-in. in diameter. In order to secure a roll as large as 15 to 20-in. in diameter, we have been compelled to purchase hard rubber rolls from the Goodyear Rubber Co. These rolls do not pick up the graining impression cleanly off either the copper graining plate or graining boards that we use. The graining impression that we get is often smeared and imperfect.

What we want you to do if possible is to let us have the names of companies who manufacture rubber or any synthetic compound that can be used on a graining roll with a diameter of 15 to 25-in.—L. Mfg. Co. (Pressed Metal Products.)

Furniture Finisher

A short time ago an article appeared in INDUSTRIAL FINISHING asking if you knew of a service by an individual or a concern specializing in designing new finishes and finishing samples. I'm a plain journeyman finisher. I have just returned from Philadelphia and Buffalo, N. Y., where I spent six months finishing the new line brought out by the—— Co.; also in training their foreman to handle the new work. At the Grand Rapids, Mich. July market this line booked $150,000 worth of business in three weeks.

My connections have terminated and I am again at public service in this line. I can go anywhere on short notice; can do all work if necessary; also train those who are to do the work. My rates are reasonable and I can work with or without the executives or designers at the plants in question.—H. F. G.

Rubbing, Buffing Machines

Please send us a list of manufacturers of small portable sanding, rubbing or buffing machines. We are interested only in those that use sandpaper for abrasive, and which are power operated by either electricity, hydraulic or air.—R. Products Co.

Luminous Paint

Referring to inquiry from D. D. Mfg. Co. on page 7, September issue, I offer the following information to show that there is absolutely no alternative for the one proper type of material to use for the intended purposes.

The inquiry is for the common class of luminophorous paint which is entirely dependent on the absorption of outside light, and therefore emits a glow only to the extent of its prior intake. Luminous substances of this type, on being subjected to the influence of active light of the sun, are energized in such a way as to emit a glow in the dark. Naturally, then,

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the intensity and duration of the emanation is correspondingly limited and ununiform. I have tested these products several times—particularly Dr. Balmain's (English) well-known violet luminous paint sold in this country—by exposing the coatings to bright sunlight throughout the day, and invariably the weak luminescence which had been produced declined rapidly, so that by midnight the same was hardly discernible. Obviously this old original type of phosphorescent compound is not feasible commercially, as what little glow it can possibly emit is altogether governed by prior climatic exposure. It then becomes manifest that luminosity must be a property inherent in the coating material to be utilized, and not at all dependent upon outside sources to activate it.

Fortunately, such a material is procurable (name and manufacturer given on request). Most people are familiar with it as the luminous paint on the dials and hands of watches, clocks, airplane instrument boards, etc. It is frequently spoken of as "radium paint," but correctly it is radio-active luminous compound made by incorporating radium ore in a radio-responsive zinc sulfide of crystalline form. This phosphorescent zinc sulfide, when mixed with an amount of radium ore, continues to emit a greenish-yellow light . . . the intensity of the luminescence being largely proportionate to the radium used. The greater the initial radium content, the greater the initial luminosity; but the more rapid the loss in responsiveness by the zinc sulfide crystals. Hence, the fall in luminosity is most rapid in the compounds that contain the largest proportion of radium ore.

For the best commercial results, therefore, from the standpoint of both cost and effective life, it is plain that it would be desirable to use the grade of luminous material that contains the lowest radium content providing the degree of luminosity desired. In general, it would be better to apply a somewhat thicker layer of a lower grade of luminous material (say, up to 1-mm. thickness) than to attain the same luminosity by the application of a thinner layer of a compound of higher radium content and higher luminosity. The highest grades are required on airplane instruments where maximum high luminosity of the compound renders it visible even in semi-darkness. Intermediate grades are used on the better class of timepieces, etc. The less expensive grades would be the class of material necessarily to be utilized for painting extensive areas. This latter grade would be recommended not only from the standpoint of expense but mainly on the principle that its lower radium content insures against premature deterioration of the zinc sulfide and consequently would prolong the period of responsiveness in emitting light.—Perry.

Picture Finishing

How can we make the medium called megilp in liquid form so as to make oil paints thin and transparent in order that the oil colors can go through an air brush of the smaller types of freehand work?

Can you also advise what is a good sizing to spray on photos of paper surface after they have been air brushed with water colors so that we can use brush and paints over this work, as it usually absorbs the paint and will also stain the paper if not coated first? We tried spraying light varnish or shellac and find that they make a gloss that renders the surface slippery and not good for painting for the artist.

We have another question that you may be able to answer. Is there any possible chance of getting a highly glossy gold finish on picture

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frame moulding by spraying "bright" gold bronze, then lacquer, in order to closely imitate gold metal leaf?

Drum Pumps Again

On page 12 of the September issue of INDUSTRIAL FINISHING, you mention, under the initials S.D.M., some very interesting information concerning a small pump for withdrawing material from drums. We would appreciate hearing from you in connection with this apparatus and hope you can supply us with the name of the manufacturer.—S. H. Varnish & Color Co., Ltd.

Aspinwall Enamel?

We understand there is on the market a white enamel made by a firm by the name of Aspinwall, in England. We would like very much to get in touch with an American firm handling this material. Perhaps they have their own branch in one of the larger cities. Any information you can give us on this subject will be appreciated.—V. D. J. Co. (Hdw. & Sheet Metal Specialties.)

Paint Associations Merge

The American Paint and Varnish Manufacturers' Association and the National Paint, Oil and Varnish Association became one under the new name, National Paint, Varnish and Lacquer Association, at the annual conventions of the two old associations, held at the Edgewater Beach Hotel, Chicago, October 30 to November 1.

Ernest T. Trigg, president and general manager of John Lucas & Co., Inc., Philadelphia, was elected president of the new organization to serve for three years. He is resigning his position and moving to Washington in order to devote his entire attention to the interests of the industry during his service as president of the new association.

P. V. & L. Code

The N. R. Administration announced on Nov. 1 the formal approval given by the President to a code of fair competition for Paint, Varnish & Lacquer Mfg. Industry. The code reduces the average work hours from 47.5 to 41.2 per week, and means an increase of approximately 25% in employment.

Booklets About New Finishes

Berry Bros., 211 Leib St., Detroit, Mich., has just prepared for distribution two very interesting and informative booklets, one about "Berrylac" (4-pages, 8½ x 11), and the other about "The 448 System of Wood Finishes" (5-pages, 8½ x 11), which are available to manufacturers interested in these materials.

Zinc in Relation to Health

A very interesting article by Doctors Drinker and Fairhall, on zinc in relation to general and industrial hygiene, appears in the August, 11th, 1933, issue of the Bulletin of the United States Public Health Service. Because of the misinformation which exists on this subject, and in view of the fact that many parts of food-mixing machinery are being die cast, The New Jersey Zinc Co., 160 Front St., New York, N. Y., is sending out a few reprints of the article.

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MAGAZINE

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EDITORIAL

To Review Developments of 1933

The January 1934 issue of INDUSTRIAL FINISHING will feature a Major Review of "New and Improved Materials and Equipment," the data for same being compiled from information furnished by progressive manufacturers in industry. This review not only supplies information of practical value for the moment, but also serves as an excellent reference for users of materials, supplies and equipment in the future. In the review the items are conveniently classified and each new article is named and given only small space for a few brief remarks about its principal features, characteristics, or performance—supplying only enough information to enable the reader to decide whether or not he's interested. With every item brief and to the point, the entire review becomes especially inviting because it can be read quickly and easily.

The review published last year created unusual interest and elicited hundreds of letters asking for further information regarding certain items in which prospective users were particularly interested.

Artist-Designers

Industry is becoming more interested in artist-designers, employing them to redesign old products and to originate designs for new articles, packages, labels, advertisements, etc. New lines in form and more striking combinations of color are in demand not only to attract attention and stimulate the buying urge, but to maintain an established firm's standing among its present and prospective customers—to prevent its products from falling back from first place to the ranks of the commonplace and finally losing their identity among other forgotten stragglers.

Artist-designers, sensing their opportunities, are becoming more interested in industrial materials and equipment with which they can work out or direct the working out of their ideas. Many of these people, once dubbed visionary and impractical, are really very practical and they are becoming a real factor in modern industrial progress.

Spring Fashion Colors

The fashion colors for Spring, as issued in advance by the Textile Color Card Association of the

U. S. to its members, reflect significant new themes which suggest effective fashion and merchandising promotion ideas to the finishing trade. In interpreting the new colors the managing director of the Association calls attention to the virile hues of Oriental inspiration. The New York City market has started to show a decided trend to Oriental influence in fashion.

ORIENTAL COLORS

Typical of this smart development are Manchu Red of bright yellowish cast; Nanking Blue—a medium tone of slightly greenish cast; and lively shades like Dragon Green and Mandarin Rust. While pure white and cream white will be in favor, the newest light neutral note is Linbeige, a natural linen or crash shade. This shade will be especially fashionable in combination with the Oriental colors just mentioned, and with Schooner Blue (a new navy blue), Amadou Brown and Chinese Rust.

NEW COMBINATIONS

A smart combination is the alliance of a light grey, called Nugrey, with navy and livelier tones. Another interesting new theme is the introduction of rusty, coppery reds, such as Emberlite and Breton Red, into the sports features.

PASTELS; TROPICAL TINTS

New versions of pastels are accorded high recognition. These include the more positive tropical tints such as Corn Gold, Sun Red, Rickey Green, Italian Turquoise; also cloudy, thin tones including Strawberry Pink, Lotusblue (a soft violet blue) and Pearlblu (a pale sky tone). The pastel range will also include Coraltint, Lilactint, and Seadew—a pale watergreen.

ALPINE COLORS

There will also be an Alpine influence for the Spring fashions, such as Alpgreen and Bernese Blue.

OFF SHADES; FADED COLORS

As a more sophisticated development there will be restrained "off shades," which may be described as "faded," having high style interest. Among these are: Heather Blue and Zinc Blue; Plum Brown and a light vintage shade called Wine Rose; Mustard Green and Clove Dust—all soft and cloudy in tone.

STRONG BASIC COLORS

For the strong basic color trends, emphasis is placed upon blues, particularly clear purplish tones. Wedgwood Blue expresses the ceramic type; Romany Blue is a medium greenish version, while Ship Blue and Schooner Blue reflect the smart nautical theme. Greens have attained an enviable position in the style picture and appear in several new variations. Those of yellowish cast predominate. Apple Mint is the sport shade. Coachman Green is an interesting new shade with a bluish undertone.

There is every indication that grey will repeat its popularity of the past Spring. The greys of a bluish cast—Nugrey and Maltese Grey—attract attention as a new fashion note. They are adaptable for combining purposes, and are soft in tone. New versions of taupe have decided importance and possess the subtle qualities so much favored in the "off shade" movement in fashion.

A fire-resistant paint containing Portland Cement as an important pigment is available in several colors, and can be brushed or sprayed.